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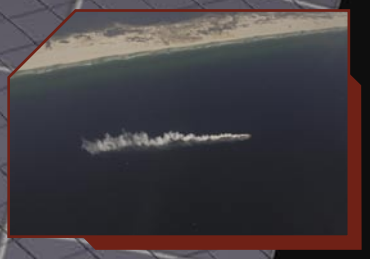
PATHFINDER

The Geospatial Intelligence Magazine

Serving the Front Line

May/June 2008

Collaborate, Cooperate, Integrate



Photogrammetry Team Models Cloud Formation

Unifying the Intelligence Profession

On My Mind

Collaboration Helps to Solve Our Toughest Challenges

In the face of an evolving, asymmetric threat environment, we must increase our collaboration across the Intelligence Community (IC) and the Department of Defense (DOD) to maintain our strategic edge. The more we work together, the more we realize just how much value can be derived by breaking down barriers between agencies. As we move away from the "need to know" mindset to a "responsibility to share" approach, the quality of support we provide to our warfighters and policymakers is increasing exponentially.

Office of the Director of National Intelligence (ODNI) and DOD guidance, as outlined in the National Intelligence Strategy and the Defense Intelligence Guidance, demand increased collaboration. DNI Mike McConnell states in his guest column, "Intelligence analysis must be multi-INT, cross-discipline and multidimensional to be complete." Our threats are multidimensional and our adversaries strive to exploit seams in our defenses. Collaboration is valuable in eliminating gaps and improving our intelligence services and products.

Collaboration is a strategic priority. Our NGA Focus Areas challenge us to "look outward and be the most collaborative and integrated partner with the IC and the warfighter" and to "strengthen quality of analysis in concert with other IC partners." These statements align directly with ODNI and Under Secretary of Defense for Intelligence priorities. Geospatial intelligence (GEOINT) remains a key foundational element that promotes the accurate aggregation of intelligence data throughout the community. This common reference frame enables collaboration and enhances national security.

People Lead the Way

Our people are the biggest driver of collaboration, as individuals use tools and seek new ways to interact with other agencies. We have embedded both analytic and support personnel at hundreds of locations, on six continents, to help our partners apply and manipulate GEOINT and to capitalize on all its attributes.

As we encounter new threats, we are reminded of the importance of working directly with our partners. Individuals who collaborate regularly are better equipped to recognize the scope of perspectives and creatively seek solutions. Forward-deployed personnel learn the battle rhythms of our warfighters, anticipate their needs and provide the highest quality intelligence products to help them achieve their mission. NGA's Support Team structure places NGA staff in the footprint of our partners at more than 150 locations. Having our people embedded with our mission partners, on joint duty assignments, deployed into forward theaters, is the best way for NGA to continue in our tradition of collaboration.

Technology Enables Collaboration

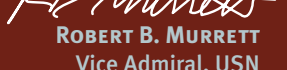
With NGA personnel and our IC and DOD colleagues spread around the world, new tools improve communication, foster collaboration and further integrate our systems. Wikis and other forms of social media enable analysts to instantly communicate with their colleagues regardless of location. NGA has also sought to upgrade existing technologies, including information technology and community systems. NGA is at the forefront of collaboration, and our workforce is creatively developing tools to continuously improve our tradecraft.

NGA is one of the biggest users of Intellipedia, and our workforce is already anticipating the new DNI initiative, A-Space, a virtual work environment for analysts. We are full supporters of the DNI-led effort to carry forward the Intelligence Community Architecture (ICA). The end goal of the ICA is to establish a system through which the entire community can interoperate and share data through native systems and multiple security levels.

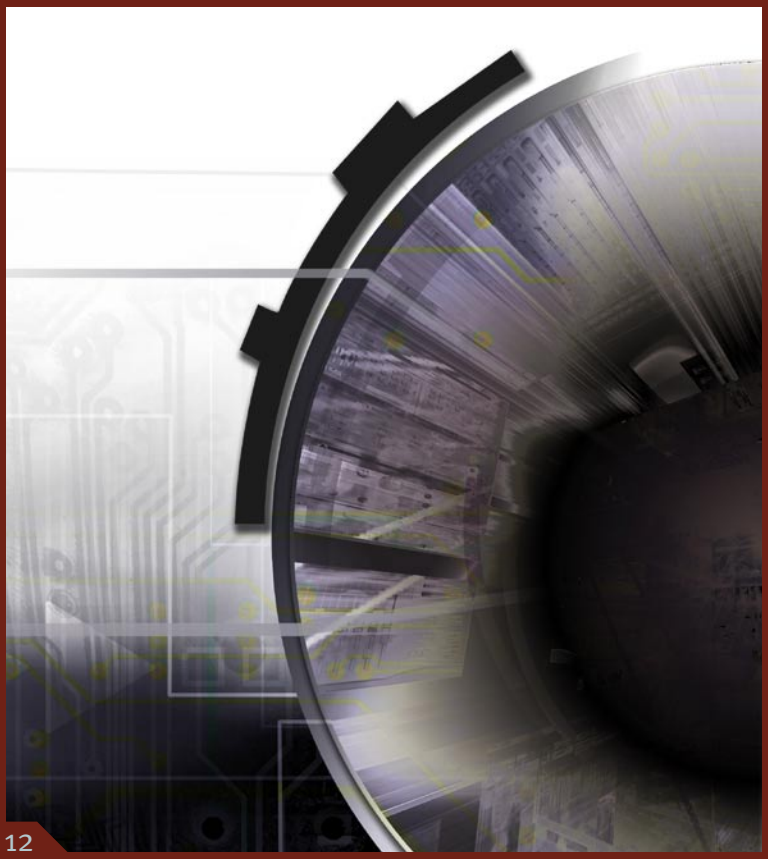
Across the National System for Geospatial Intelligence, it is the people who harness this technology who are making the difference, as they discover new ways to leverage systems, in concert with their counterparts across the intelligence and defense communities.

Looking Forward

NGA will continue to look outward and strive to be the most collaborative partner with the IC, the warfighter, policymakers and all of our mission partners. As the demand increases, NGA will remain forward leaning and learn to best leverage collaborative tools and the creative talents of our workforce—and to make sure that GEOINT is effectively available to and absorbed by our defense and IC counterparts.



Robert B. Murrett
Vice Admiral, USN
Director



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20

On the Cover

The member agencies and organizations of the U.S. Intelligence Community excel within their respective spheres of responsibility, but no member acts alone. The Office of the Director of National Intelligence leads to ensure "a unified enterprise of innovative intelligence professionals." Though their footprints may vary depending on the nature of a problem, all members make their unique impressions. In service to the nation, each applies its respective disciplines and perspective in an increasingly coordinated effort to advance the frontiers of collection and produce the finest intelligence. In this issue, the Pathfinder illustrates the critical contribution of NGA and GEOINT to the fluid but unified operation of the Intelligence Community. Vincent Gaines and Carmella Bender designed the cover. Concept by Jason K. Michas.

Contents

2 Letter to Our Readers

3 Guest Column: Collaborate, Cooperate, Integrate

5 Up Front: Clapper Inducted Into the NGA Hall of Fame

›› FEATURES

6 NGA Support Team Exemplifies Unified GEOINT Operations

7 NGA and CIA Build Collaborative Partnerships

8 Integrated Collection Management Accelerates Interagency Cooperation

9 NGA Integrates ONIR into the Mainstream

10 Photogrammetry Team Models Cloud Formation

12 NGA's Gateway Expands Virtual Community

›› DEPARTMENTS

14 Partnerships: Commonwealth Partners Learn GEOINT With U.S. Counterparts

16 21st Century: Advanced Geospatial Intelligence Enhances Commercial Imagery

17 New Campus East: NGA Constructs a GEOINT Center of Excellence

18 Our Heritage: IC Senior Historians Panel Nurtures the Human Network

20 Working for NGA: Visual Media Artists Capture ICy Awards

More to the Story?

The online Classified Pathfinder, which is accessible by members of the Intelligence Community, may include additional information and expanded sections of some Pathfinder articles. The Classified Pathfinder provides a forum for reading and discussing topics at the level of "Unclassified//For Official Use Only" or higher. For information please contact the editor, Heather Cox, at 301-227-2290.

Letter to Our Readers

Unifying the Intelligence Profession

Each member of the Intelligence Community (IC) has a specific charge, an essential role to play in providing the best information possible to our nation's leaders, enabling them to pursue the courses of action deemed most effective to secure the safety of Americans and the interests of our country. This issue's theme, "unifying the intelligence profession," intimates the essential pursuit by all members of the IC to discover new ways to better integrate our disciplines. NGA has sought vigorously to implement the goal of greater IC integration.

The Pathfinder invited Mike McConnell, Director of National Intelligence, to share his vision of closer IC collaboration. In his guest column, McConnell discusses several ways in which integrated relationships have developed among members of the IC and its mission partners, including the introduction in March 2008 of the online Classified Pathfinder, accessible by members of the IC, to complement and expand the informative work accomplished by this publication. McConnell also reiterates DNI initiatives that will unify the community even more.

NGA has led the community in instilling closer cooperation by reaching out to our mission partners and providing dedicated NGA Support Teams (NSTs) that reside within their footprints. To coordinate the GEOINT needs and resources of the IC to ensure the greatest impact, NGA practices Unified GEOINT Operations (UGO), exemplified by the NST at the Defense Intelligence Agency, as you will read in this issue. In another feature article, we explore NGA's collaborative partnership with CIA.

A discussion of an important joint program of NGA and the National Security Agency amplifies the value of a multi-intelligence approach in "Integrated Collection Management Accelerates Interagency Cooperation." The community can only benefit as this program expands throughout the IC.

Several articles explore the application and development of technology. The transfer to NGA of functional management of a significant collection tool demonstrates the DNI's commitment to aligning the IC for optimum efficiency, as indicated in "NGA Integrates ONIR Into the Mainstream." "Photogrammetry Team Models Cloud Formation" and "Advanced Geospatial Intelligence Enhances Commercial Imagery" examine different but ultimately complementary methods by which NGA scientists are expanding the tools available to the IC and the military services.

Apropos of NGA's designation as a combat support agency, the July/August issue of the Pathfinder will illuminate the agency's support to the warfighter.

Paul R. Weise
Director, Office of Corporate Communications

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GETTING PUBLISHED
All members of the geospatial intelligence community are welcome to submit articles of community-wide interest. Articles are edited for style, content and length. For details on submitting articles, send an e-mail to pathfinder@nga.mil.

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Guest Column

Collaborate, Cooperate, Integrate

By Mike McConnell, Director of National Intelligence

Importance of Collaboration...

The world today is more interconnected, complex and dynamic than ever. The advance of globalization has enabled, amplified and accelerated threats stemming from international terrorism, weapons of mass destruction, failed states and illegal drug trafficking. These threats, among others, move at increasing speeds and across geographic and organizational boundaries, blurring the distinction between foreign and domestic threats and between strategic and tactical events.

Our old intelligence construct must adapt to this new environment. For example, intelligence analysis must now be multi-INT, cross-discipline and multidimensional in order for it to be complete. We must make it easy to bring more minds together to think about the hardest intelligence problems. We must also make sure we have recruited and developed a diverse workforce, one that reflects the current global environment and that brings the linguistic, cultural, political and other relevant experiences to the thought process.

One way to help meet this new challenge is through collaboration. Collaborating around critical mission areas—counterterrorism, counterproliferation and avoiding strategic surprise—will help close the gaps and provide higher quality, more relevant and timely intelligence to our customers, whether on the front line or in the White House.

We all know that we achieve significantly more when we work together. The Intelligence Community (IC) must achieve what the Department of Defense (DOD) did through the Goldwater-Nichols reform in the 1980s when they realized that "jointness" was a necessary step to achieving a higher level of excellence. Similarly, once we achieve "jointness," we will collaborate naturally as a basic way of doing business in the IC. NGA is one of the community leaders working toward "jointness." Through the National System for Geospatial Intelligence and the commitment to embedding personnel in mission partners' battle rhythms, Vice Adm. Murrett and the NGA leadership team are making great strides to reduce the overlap of efforts and eliminate information gaps.

...Across the IC

To better share insights and opinions, the senior leaders needed to set the stage for collaboration. As a first step,

Mike McConnell, Director of National Intelligence

I established the first Executive Committee (EXCOM) for the directors of the various IC agencies to meet regularly. This forum goes a long way toward breaking down old stovepipes and in so doing allows for better decision-making. Additionally, the Joint Duty Program is now in full swing and will do more for collaboration at the working level than most other efforts. As individuals with joint experience rise through the ranks of the organizations, the custom will be to reach out and collaborate as the rule rather than the exception. Every initiative is being driven by some form of agency working group. For example, the Deputy Director of National Intelligence (DDNI) for Analysis has established a Coalition for Collaboration that meets with members of the IC agencies to work as change agents within the Community for greater collaboration.

At the working level, there are some great collaboration success stories. Take Intellipedia for example. Its use is growing exponentially, with little formal planning or oversight. Groups of analysts are forming communities of interest every day. They reach out to other analysts with similar geographical or problem areas and they share information. They are blogging with one another, asking questions,

sharing information and collectively reaching solutions. NGA is one of the IC leaders in using and adopting this social software. The number of NGA self-identified Intellipedia users has jumped more than 81 percent in the last six months with over 400 distinct article pages posted in the NGA Intellipedia category. Additionally, NGA's decision to stand up the first Classified Pathfinder in March received significant attention from across the Community with over 1500 hits and 500 unique visitors in the first week of publication.

...with DOD

Our DOD members represent some of the largest agencies in the IC. The symbiotic nature of our working relationship and information sharing benefits everyone. Secretary of Defense Robert Gates and I worked to identify ways to better integrate DOD into the national intelligence system. Jim Clapper, the Under Secretary of Defense for Intelligence (USD (I)), was asked to serve as the Director for Defense Intelligence, which enables him to be a full, collaborative partner on intelligence issues. I have assigned a member of my staff to work as a liaison with the USD(I) staff, attend their staff meetings and serve as an interface on key issues. The USD(I) has done the same with a reciprocal liaison who has an office in our spaces.

...with Foreign Partners

Collaboration with our foreign partners has become increasingly more important due to the growth of coalition activities in response to changing world events, evolving international threats and the ongoing Global War on Terror. If you think about burden sharing and the best way to use scarce resources, collaborating with our foreign partners makes a great deal of sense. Sharing information allows us to reduce duplication of effort and maximize our quality output for the good of all involved. This also gives us insight into areas we would not normally access and allows us to benefit from analysis from differing viewpoints and gain expertise from diverse subject matter experts. Additionally, through collaboration our foreign partners are better prepared to assist the United States in a crisis or in a coalition environment. NGA's efforts as an international leader for geospatial intelligence are commendable.

...with Industry

Our industry partners are at the forefront of research and development, making collaboration vital to our ongoing success as a Community. By demonstrating genuine interest in learning best practices that have already been developed, applied and tested, we do not have to make the same mistakes our predecessors made. Congress appreciates this efficient collaboration because we are being good stewards of the funds that the American people entrust us with.

The Way Ahead

We still have some work to do before we fully realize "jointness" and establish collaboration as our basis of operation. The following are IC reform priorities that are requiring our focus:

- Significantly ***enhance intelligence collaboration*** across the IC
- ***Improve analytic tradecraft*** through more rigorous standards, alternative analysis and greater IC analytic collaboration
- ***Enhance collection*** by establishing the NIC-C—National Intelligence Coordination Center—for all-source intelligence collection, coordination, customer service and tasking deconfliction
- ***Integrate and coordinate the IC budget*** process
- Resource the National Counterterrorism Center ***(NCTC)*** for integration of all counterterrorism intelligence
- Support and enable implementation of the national ***Cyber Security Plan***
- Establish civilian joint duty for the IC (to emulate U.S. Joint Military Operations)
- ***Implement information sharing with*** the United Kingdom, Australian and Canadian partners via the Secret Internet Protocol Router Network (SIPRNet)
- Establish IC EXCOM to provide decision-making support for Community-wide issues
- Transform the ***security clearance*** process to be more rapid, cost-effective and efficient
- ***Modernize the Foreign Intelligence Surveillance Act (FISA)***, which is essential for our future IC effectiveness

When individuals and agencies actively form communities of interest, work together, and share information with a common belief that the collective wisdom will satisfy the intelligence consumer, I call that "collaboration." Collaboration invokes an active willingness to share. It also manifests itself as common language, common understanding and a common set of goals. What we all need, to meet today's threats and opportunities, is a willingness to cooperate and an eagerness to collaborate. That is how we will move the IC from "a culture of ownership" to "a culture of collaboration." P

Clapper Inducted Into the NGA Hall of Fame

By Kelly Kemp

Former NGA Director and current Under Secretary of Defense for Intelligence, retired Air Force Lt. Gen. James R. Clapper Jr., was inducted into the NGA Hall of Fame during the Director's Recognition Ceremony at NGA headquarters on March 25, 2008. "Today we welcome you into the NGA Hall of Fame for all the tremendous work you have done to support NGA and our mission and for your long history of service..." said NGA Director Navy Vice Adm. Robert B. Murrett as he presented the award.

Clapper was honored for his many exemplary contributions to the Intelligence Community (IC) and the United States between September 2001 and June 2006. On Sept. 13, 2001, two days after the terrorist attacks and the declaration of a global war on terrorism, Clapper was announced as the second, and first civilian, director of the National Imagery and Mapping Agency (NIMA), succeeding geospatial pioneer Army Lt. Gen. James C. King.

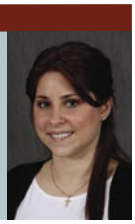
Immediately recognizing that new threats could occur at any time or place, Clapper began to promote products that emerged from a variety of new initiatives. He moved to embed analysts throughout the combat support and IC networks, and established an NGA element to provide support to the newly organized Department of Homeland Security. Clapper pioneered the new discipline of geospatial intelligence, known today as GEOINT, by directing that the previously separated imagery and geospatial analysis tradecrafts operate within a common collaborative environment. His concept of a unifying discipline and doctrine guided the transformation of NIMA through congressional legislation into the National Geospatial-Intelligence Agency in 2003. The new name represented the maturation of the GEOINT discipline and the increased unification of the agency's parts.

As NGA Director, Clapper also assumed the role of GEOINT functional manager. He set about composing plans and policies that would govern GEOINT resources within a National System for Geospatial Intelligence. Creating a series of formal communications and directives, Clapper published a working doctrine for GEOINT—the first ever Geospatial Intelligence Basic Doctrine, which appeared in July 2004.

Vice Adm. Robert B. Murrett welcomes former NGA Director retired Air Force Lt. Gen. James R. Clapper Jr. into the NGA Hall of Fame.

At the induction ceremony, Clapper thanked and expressed his appreciation to colleagues: "It's great to be home; I am honored and touched by this recognition." The NGA Hall of Fame Award was established to recognize employees from all levels who have contributed notably to the unfolding mission of NGA and its predecessor organizations in advancing imagery, imagery intelligence and GEOINT.

Kelly Kemp works as a Staff Officer in the Office of Corporate Communications, Internal Communications Branch.



NGA Support Team Exemplifies Unified GEOINT Operations

By Tom Cooke

As the functional manager for geospatial intelligence (GEOINT), NGA has the primary responsibility for ensuring that GEOINT is fully and appropriately integrated into analysis throughout the Intelligence Community (IC), reflecting the Director of National Intelligence's (DNI's) mandate for increased collaboration. This effort is being realized partly through a systematic approach, known as Unified GEOINT Operations (UGO), designed to assess, align and execute GEOINT across the IC. The NGA Support Team (NST) supporting the Defense Intelligence Agency (DIA) has adopted UGO as its business model.

Unlike most NSTs, which provide direct product support to regional or functional organizations such as the Combatant Commands or the military services, the DIA NST is an agency-to-agency support team, as are teams supporting CIA, the National Security Agency, FBI, the Department of State, and the Department of Homeland Security. Since DIA's all-source analytic portfolio encompasses the gamut of the intelligence process, NGA analysts within the DIA NST must be fully cognizant of all NGA GEOINT analysis and production and serve as a conduit to ensure that NGA products are appropriately integrated into DIA all-source products.

The UGO model recognizes that NGA cannot unilaterally support all the geospatial requirements of all-source analysts. The director of the DIA NST, who also serves as the DIA UGO Manager, and a DIA counterpart who serves as a UGO Officer, form the local UGO team. Together, they work to synergize each agency's intelligence production and limit redundancy.

Much of DIA's production effort complements NGA GEOINT analysis; it is the job of the DIA NST to coordinate these efforts to effect positive collaboration. For example, DIA is currently exploring immersive analytic techniques that include projecting 3-D geospatial products in such a way that an analyst can literally stand inside them. Using the UGO structure, the DIA NST is working diligently to bring DIA and NGA analytic elements together to share insights into this emerging capability.

Historically, DIA has maintained the capacity to produce geospatial graphics to support its mission. To avoid duplication, the DIA NST, employing UGO, works closely with senior analysts at both agencies to ensure that they are aware of the others' work and, as needed, help align production capabilities.

By incorporating UGO into its business practices, the DIA NST exemplifies the effort to implement the DNI's mandate for collaboration. Analysts from DIA and NGA collaborate frequently on joint products and now routinely share bylines—a source of pride for both DIA and NGA and a result in large part of applying the UGO model. P

Tom Cooke
is Deputy Director of the Defense Intelligence Agency NGA Support Team. He is a retired Army lieutenant colonel with over 28 years' intelligence experience.

NGA and CIA Build Collaborative Partnerships

By Cheryl Southworth

Vice Adm. Robert B. Murrett, NGA Director, recently commented, "The NGA Support Team (NST) to the Central Intelligence Agency is one of the quietest NSTs, but in their own way, one of the most effective." Although this NST's work is not widely publicized because of the CIA's mission, the team has been a powerful force in assimilating CIA into the National System for Geospatial Intelligence (NSG), integrating geospatial intelligence (GEOINT) into the CIA's processes, building collaborative partnerships, increasing NGA–CIA developmental opportunities and facilitating cross-training programs.

To enhance CIA's ability to function as part of an integrated element within the NSG, NGA has embedded a technical director and geospatial analyst within CIA operations and assigned geospatial process consultants to assist the CIA with defining and shaping strategic technology roadmaps consistent with the NSG and identifying the appropriate level of engagement with NSG forums. They also open up opportunities to combine substantive NGA and CIA efforts.

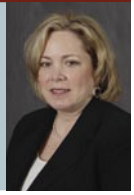
The primary mission of the NST is to ensure that GEOINT is effectively used whenever and wherever it is needed to enhance the quality of intelligence. Applying GEOINT to the CIA's collection, analysis, operations and technical development through the building of collaborative partnerships is the day-to-day task of the NST at CIA. The NST links the CIA's evolving GEOINT needs with NGA's evolving capabilities, engaging CIA leaders to demonstrate for them how GEOINT methodologies, techniques, data, products, analysis and services could be applied to the CIA's missions. As NGA and CIA develop new processes and policies, NGA-CIA partnerships are enhanced and established.

While the CIA workforce learns about GEOINT, so too does the NGA workforce learn about the CIA. Career development opportunities include cross-training and visits that span from the junior analyst level through mid-career and senior leadership levels. The NST coordinates exchange visits that provide opportunities for face-to-face interactions between offices of similar responsibility and are intended to increase interagency collaboration. In addition, as part of the Intelligence Community Walkabout Program, CIA provides NGA analysts with beneficial enrichment on the mission of CIA and their relationship with NGA.

In order to complement in-depth interagency experiences, the NST facilitates the NGA–CIA Internship Program for junior analysts. This program is responsible for creating a "two-way street" between NGA and CIA analysts. NGA analysts work in CIA spaces with their CIA counterparts for a two-week substantive assignment, while CIA analysts fulfill a five-week rotation requirement alongside the NGA analysts as part of their career development. Furthermore, NST liaison officers support CIA's training programs by educating CIA officers on NGA's mission, services and products.

As NGA's team at the CIA, the NST maximizes NGA's impact on CIA's analysts, operations and technical developments. The one-on-one relationship assists NGA in integrating world-class, one-of-a-kind GEOINT into the CIA's products, providing policymakers and the Intelligence Community with robust, integrated intelligence that is enhanced by the strong collaborative partnership of these two agencies. P

Cheryl Southworth
is the Executive Officer for the NGA Support Team to CIA.



Integrated Collection Management Accelerates Interagency Cooperation

By Lt. Col. Scott C. Poole, U.S. Army

As a joint program of NGA and the National Security Agency (NSA), Integrated Collection Management (ICM) synchronizes these agencies' collection and exploitation efforts through all phases of the intelligence cycle—tasking, collection, production, exploitation and dissemination—with a vision to do so across all intelligence disciplines. Integrated Collection Management (ICM) promises diverse benefits as it expands the depth of discussion from analysts to collectors among Intelligence Community (IC) partners.

Beginnings

The advantages of using ICM to address increasingly complex and nuanced intelligence issues might seem obvious, but ICM's adoption took the intervention of two visionary leaders. In 2003, retired Air Force Lt. Gen. James R. Clapper Jr., then-director of NGA, and Air Force Lt. Gen. Michael V. Hayden, then-director of NSA, began to build bridges connecting their organizations' previously stovepiped disciplines. They encouraged collaboration between their agencies and among their analysts, forging an alliance in hopes of expanding their efforts throughout the IC.

Through a number of preliminary tests, they secured the support of the Director of Central Intelligence for an ICM pilot project called the Source-Overhead Collection Management Center Horizontal Integration Pilot. Subsequent funding and support have come through the Director of National Intelligence's Office of Collections, and personnel from NGA and NSA have been integrated into each other's organizations, including strategic leadership roles.

Expansion

The initial ICM pilot grew with the steady development of the program's fundamental methodology, the Collaborative Collection Strategies (CCS) process. CCS is a joint collection strategy based on customer intent, implemented to proactively plan collection across two or more intelligence disciplines, and executed in a manner that maximizes the unique capabilities of each. CCS operations seek to equip analysts, collectors and customers with timely, relevant and actionable data to create a more complete understanding of intelligence problems.

With the formal standup of ICM in March 2006, the ICM Program Office was established to further develop the concept. Currently resident in NGA's Source Operations and Management Directorate, the office promotes the collaborative nature of ICM throughout the IC, reaching agencies, collectors and analysts even at operational levels.

Collaborative Collection Strategies

Although similar to traditional multi-intelligence collection, Collaborative Collection Strategies (CCS) actively engage collectors and analysts from agencies to formally collaborate throughout the intelligence cycle to support precision cross-discipline collection and analysis operations—from identification of the problem through the development and execution of the specific strategy. CCS operations are seeking to grow beyond the initial SIGINT–GEOINT proving ground to include the other IC disciplines.

A specific CCS encompasses actions at all phases of the intelligence cycle as necessary to allocate sensors from two or more disciplines against a specific intelligence problem. A CCS coordinator facilitates collaboration between disciplines to implement the operation within a team that includes one analyst and one collector from each intelligence discipline involved in the strategy. Collection managers translate CCS objectives into instructions for collectors and analysts regarding specific requirements, tasking and guidance systems.

Different strategies can be applied depending on requirements. A sequencing CCS sets up collection from one discipline to invoke collection in another discipline, purposefully staggering collection for greater persistence of coverage. A convergence CCS improves collection fidelity by combining sensors to collect on a target simultaneously. A separation CCS reduces unwanted redundant collection by placing assets from one discipline on a specific area and assets from another discipline elsewhere. P

New ICM methodologies will synchronize operations involving two or more disciplines—currently signals intelligence (SIGINT) and geospatial intelligence (GEOINT)—to fully leverage their capabilities. ICM will eventually cross all intelligence disciplines by:

» Integrating collection and tasking of GEOINT, SIGINT, human intelligence (HUMINT), measurement and signatures intelligence (MASINT), and open source intelligence (OSINT) sensors against common intelligence problems

» Providing new collection methods by combining or alternating sensors from two or more disciplines to satisfy intelligence needs

» Formulating multidiscipline sensor allocation schemes to employ new collection methods

» Equipping customers and analysts with a multidiscipline collection capability that uses the right sensors to best satisfy an intelligence problem

ICM represents a major change, requiring the IC to re-engineer its business practices, magnify the best it has to offer, and challenge previous norms and boundaries.

The Way Ahead

ICM is the transformational program underpinning the work of the IC toward realizing the vision of multidiscipline collection. Therefore, the ICM Program Office will seek to impel members of the IC to provide incentives to achieve multi-intelligence integration goals. With the mostly manual ICM process proven over the past three years, it is now a short step to automate ICM to optimize the allocation of sensors across disciplines and further instill ICM throughout the IC. To extend and mature ICM's capabilities, the program will continue to promote programmatic and operational initiatives and seek out and engage agents of change within the IC.

Lt. Col. Scott C. Poole
is the Program Manager for Integrated Collection Management in NGA's Source Operations and Management Directorate.

NGA Integrates ONIR Into the Mainstream

By Tom Millman

Whether supporting military operations or homeland security, overhead non-imaging infrared (ONIR) collection provides invaluable data for our nation's warfighters and decision makers. In 2005, the Office of the Director of National Intelligence transferred functional management of ONIR from the Defense Intelligence Agency to NGA. As part of this transition, geospatial intelligence (GEOINT) was redefined to include ONIR, making it an integral component of the mainstream GEOINT discipline.

ONIR has been around since the 1960s. It has the capability to passively detect energy in the infrared portion of the electromagnetic spectrum and characterize that data to produce intelligence information.

ONIR integration into the National System for Geospatial Intelligence (NSG) is a major driver for NGA. Working across the Intelligence Community (IC), NGA's Acquisition Directorate has put together the ONIR Acquisition Plan, which lays out a strategy to correct deficiencies in the current sensor architecture, prepare for future sensors, and integrate ONIR into the NSG, of which the director of NGA is the functional manager. Additionally, similar integration efforts by other data sources, including commercial remote sensing and airborne, will collectively provide easier and more rapid access to GEOINT data for customers.

The ONIR Acquisition Plan focuses on sustaining and modernizing current ONIR capabilities and will ensure continuity in NGA's core GEOINT mission, address key capability gaps, and prepare for future sensors. ONIR's ability to monitor events in troubled areas of the world provides the nation with another level of defense. Ultimately, NGA's ONIR acquisitions will result in better access to ONIR data and better tools to exploit it.

Tom Millman
is the Chief of Staff for the ONIR Program Office.

Photogrammetry Team Models Cloud Formation

By Shawn Usman

In late 2007, several months of research and plan- ning came to fruition on the sunny shores of the Florida panhandle. Fulfilling a request by the U.S. Navy's Naval Warfare Development Command (NWDC), the photogrammetric team in NGA's Sensor Geopositioning Center (SGC), Basic and Applied Research Office, InnoVision Directorate, obtained sufficient data to begin rigorously reconstructing a 3-D photogrammetric model of cloud behavior over the open ocean under varying weather conditions. The design, analysis and outcomes of this project are contributing important tools to the warfighter and the Intelligence Community (IC).

Photogrammetry, the main focus of the SGC, includes platform and sensor design and modeling, and the acquisition, processing and extraction of geospatial intelligence (GEOINT) from sensor-derived data. When NWDC personnel began planning their experiment—the Naval Obscurants Limited Test Evaluation (NOLTE) 2—they sought out SGC's expertise.

In order to meet NWDC objectives, SGC scientists planned a combined airborne and terrestrial collection strategy. Photogrammetry requires strict geometric constraints on sensor positioning, making coordination and placement of the imaging sensors extremely important in the success of the analysis. SGC positioned and oriented the sensors so that the collected rays would intersect at adjacent 60-degree angles resulting in the generation of high quality 3-D data from the original 2-D sensor-derived data.

SGC scientists were challenged with the unique problem of modeling cloud formation under various atmospheric conditions at sea. By collaborating with numerous experts in the GEOINT community, the team developed a robust solution to accommodate the dynamic characteristics of clouds. NGA's GEOINT Sciences Division, in collaboration with the Defense Intelligence Agency (DIA), developed a plan using GPS receivers on a variety of airborne and land- and sea-based collection platforms, greatly enhancing the accuracy of the model. The U.S. Geological Survey (USGS) calibrated the platforms' imaging sensors in an effort to ensure accurate standards for the model.

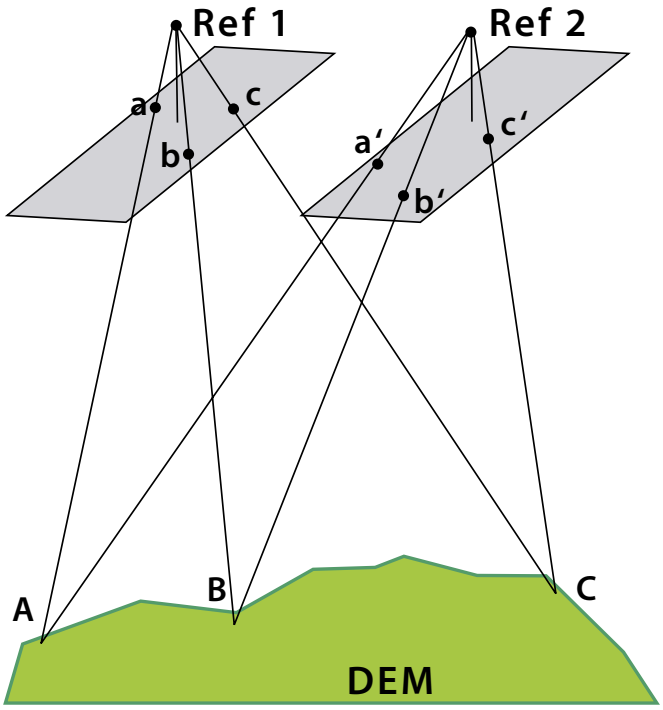


Diagram compiled by the Sensor Geopositioning Center

Stereo images intersect with known ground control points to collect data on cloud formation as demonstrated by this illustration.

Sensor positioning was of paramount importance due to the strict geometric principles needed to obtain accurate imagery. The unpredictable nature of cloud propagation directly hampered this requirement. A robust computer program developed by SGC provided an automated interface solving the requirement of strict sensor positioning in a dynamic environment.

A primary challenge for the photogrammetry team was the development of a system of aerial control points required by the multitude of collection platforms. The team developed a system of weather balloons tethered to anchored boats, aiding in the registration of imagery. This innovative system of air control points, together with sea and land control points, contributed greatly to the ongoing

Images gathered off the Florida coast are aiding the development of 3-D cloud models.

analysis of the collected data. SGC scientists are currently reviewing the over 19,000 images collected to determine which will be used to support georegistration for the development of the cloud model.

Once their analysis is complete, SGC scientists will have provided a 3-D geometric cloud model overlaid with electro-optical imagery that will serve as a basis for future cloud modeling. Additionally, the cloud model will provide a one-of-a-kind methodology for photogrammetric modeling that can be applied to dynamic characteristics other than cloud formation. Indicating the significant interest in this project, the American Society for Photogrammetry and Remote Sensing accepted a proposal for a research paper on the cloud model for its spring 2008 conference.

In addition to NGA, DIA, the U.S. Navy and USGS, representatives from the U.S. Army and U.S. Air Force have contributed to the overall success of this project, illustrating the strength that collaboration brings to solving difficult problems. The project demonstrates the value that GEOINT plays in solving complex warfighter problems and how NGA leverages one of its core disciplines—photogrammetry—to achieve IC objectives. P

Shawn Usman
is a Project Scientist in the Sensor Geopositioning Center, Basic and Applied Research Office, InnoVision Directorate.

NGA's Gateway Expands Virtual Community

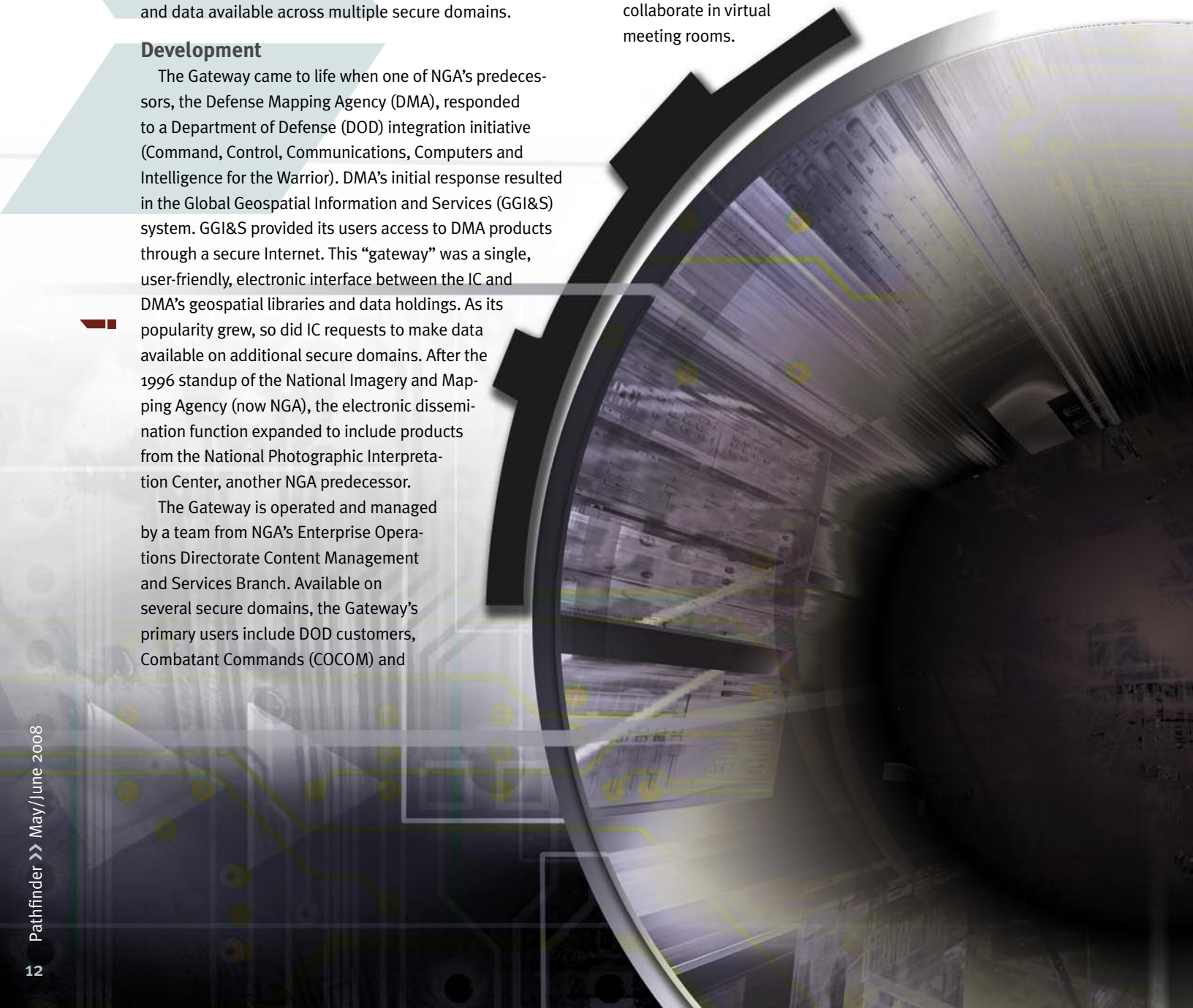
By Glenda Jones and Mary Sullivan

From its modest beginnings responding to a single set of users, the NGA Gateway has made its mark on collaborative efforts across not only the Intelligence Community (IC) but internationally as well. It now resides on approximately 500 servers and functions as the entryway into a virtual world of geospatial intelligence (GEOINT) products and data available across multiple secure domains.

Development

The Gateway came to life when one of NGA's predecessors, the Defense Mapping Agency (DMA), responded to a Department of Defense (DOD) integration initiative (Command, Control, Communications, Computers and Intelligence for the Warrior). DMA's initial response resulted in the Global Geospatial Information and Services (GGI&S) system. GGI&S provided its users access to DMA products through a secure Internet. This "gateway" was a single, user-friendly, electronic interface between the IC and DMA's geospatial libraries and data holdings. As its popularity grew, so did IC requests to make data available on additional secure domains. After the 1996 standup of the National Imagery and Mapping Agency (now NGA), the electronic dissemination function expanded to include products from the National Photographic Interpretation Center, another NGA predecessor.

The Gateway is operated and managed by a team from NGA's Enterprise Operations Directorate Content Management and Services Branch. Available on several secure domains, the Gateway's primary users include DOD customers, Combatant Commands (COCOM) and mission planners, and the IC. On average, the Gateway disseminates 175 GEOINT and safety of navigation products each day. In addition, it provides access to nearly 1.2 million Web pages with the number growing daily. The Gateway also features the NGA Portal, which provides a tool for analysts to share imagery and geospatial products and collaborate in virtual meeting rooms.



The NGA Gateway intelligence product dissemination process begins with the Consolidated Products Database in which NGA analysts can prepare and publish GEOINT briefs. After products are finalized, the database automatically transfers them to the appropriate Gateway server, ready for dissemination. The Gateway team initially provides GEOINT products on the lowest appropriate security domain, then reviews and migrates them to higher domains.

Evolution

The Gateway team has partnered with the Defense Information Systems Agency to develop a Content Discovery and Delivery Program through the Gateway. This program provides NGA data in searchable form through appropriate search engines to mission partners, including other agencies and COCOMs. This program is also driving the Enterprise File Delivery effort to synchronize data holdings from the IC or COCOMs with the Gateway on a daily basis, allowing IC and DOD customers to receive GEOINT data from NGA in a timelier manner.

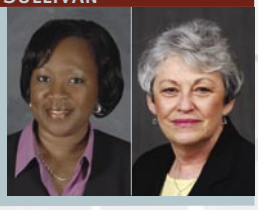
The Gateway is also helping to galvanize the popularity of Intellipedia, the Office of the Director of National Intelligence's (ODNI's) wiki environment. The Gateway is accessible from Intellipedia and uses this IC wiki as an open forum for collaboration on ideas and projects relating to the discovery and dissemination of GEOINT. The Gateway contributes to Intellipedia topics and issues relating to Web services development, including a variety of GEOINT exploitation and collaboration tools.

The team also strives to keep all Web pages on the Gateway current and accessible through an active quality program. Before new pages are activated on Gateway servers, the team reviews them for NGA style guide compliance and verifies the links for accuracy. Subsequent reviews identify broken links and ensure that Web content remains current, keeping the Gateway accessible and relevant to the IC.

As the demands of GEOINT increase, it is vital that users have access to the full array of GEOINT products and data. The NGA Gateway provides this access by using a variety of collaborative tools to deliver timely and relevant GEOINT to the DOD and the IC. It also leverages ODNI tools to take an active part in the virtual community and enhance collaboration. The Gateway inherently embodies collaboration as a fusion of interdependent technologies and teamwork that advance information dissemination and discovery. P

Glenda Jones and Mary Sullivan

Glenda Jones is Chief of Content Management and Services within the Enterprise Operations Customer Engagement, Mission Management Office. Mary Sullivan serves as Deputy Chief of Content Management and Services.



Partnerships

Commonwealth Partners Learn GEOINT With U.S. Counterparts

By Juanita Hartbarger

For the first time, imagery and geospatial analysts from NGA's Commonwealth partners Australia and the United Kingdom are learning intermediate-level geospatial intelligence (GEOINT) tools and analytical techniques side by side with GEOINT tradecraft specialists from the U.S. Army, U.S. Navy, U.S. Air Force and U.S. Marine Corps in NGA's 59-week Community Geospatial-Intelligence Analysis Course (CGAC). The course is held at the Navy and Marine Corps Intelligence Training Center at Dam Neck, Va.

CGAC is part of NGA's National Geospatial-Intelligence College's (NGC's) standard curriculum. Until now, CGAC has been offered exclusively to mid-career non-commissioned officers, along with U.S. Department of Defense (DOD) civilians.

Course content ranges from critical thinking to geographic information and systems, sensors and multi-intelligence analysis. Along the way, activities—referred to as "mini-Capstone exercises"—simulate real-world GEOINT tasks, requiring trainees to integrate the lessons learned during specific modules. The course culminates in a final, two-day-long Capstone event, with deliverables including a graded briefing before a panel of senior members of the Intelligence Community (IC).

"GEOINT training to U.S. and Commonwealth partners illustrates NGA's leadership in building a unified training framework."

Providing such joint GEOINT training to U.S. and Commonwealth partners illustrates NGA's leadership in building a unified training framework across the National System for Geospatial Intelligence (NSG), including U.S. member organizations, military services and commands, and international partners.

NGC Leads in Looking Outward

NGC's mission is to coordinate, develop and deliver GEOINT training and education to the IC, the DOD, other government agencies and international partners in support of U.S. national security.

The locus of NGC's GEOINT education and training is The School of Geospatial-Intelligence (TSG). In fiscal year 2007, TSG offered more than 180 courses. A look at its overall training and education program, including resident and non-resident offerings, reveals that 25 percent of its students are non-NGA employees. This indicates how seriously NGA takes its mission of providing GEOINT training across the entire NSG.

In addition to developing and delivering GEOINT training, NGC is charged with the long-term task of establishing standards for that training. As part of that mission, the Director of NGC serves as chair of the Community Geospatial-Intelligence Training Council (CGTC).

An NGA Partnership

The CGTC is mandated by the Under Secretary of Defense for Intelligence to work with NGC to provide a forum for moving the IC, the DOD, the military services and NGA's international partners toward a unified system of GEOINT education and training, as well as to develop a set of GEOINT training standards.

The joint U.S.–Commonwealth GEOINT training program is one indication of how effective this partnership is becoming. The program was actively pursued by NGC and by the CGTC, according to CGTC Executive Director Benjamin F. Cumbo. He sees the joint training as an extension of an earlier internal NGA initiative: NGC's decision to blend imagery and geospatial analysis in the agency's entry-level Geospatial-Intelligence Training Program (GITP).

"This revolutionary training program [GITP] had imagery analysts alongside geospatial analysts in the same classroom being taught the same curriculum," said Cumbo. "This exposed the skills of each tradecraft to each student. The imagery analysts and geospatial analysts would go back to their operational environments with a clearer understanding of what the IA or GA can do for each other."

The same template is being followed in the joint training program, with U.S. military imagery analysts and geospatial analysts training with analysts from Australia and the United Kingdom, both civilian and military.

In Cumbo's view, NGA is leading the way in transforming GEOINT "from the stovepipe model to the collaborative model. GEOINT is truly an example of working collaboratively vice the singular focus of the traditional tradecrafts."

The joint U.S.–Commonwealth GEOINT training program is one example of how NGA is translating that idea into action. P

Juanita Hartbarger
is a Public Affairs Staff Officer in the Office of Corporate Communications, Internal Communications Branch.

21st Century

Advanced Geospatial Intelligence Enhances Commercial Imagery

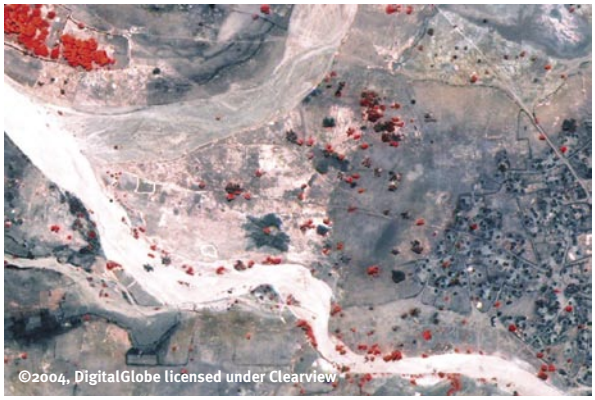
By Kensey Liebsch

The application of advanced geospatial intelligence (AGI) to commercial imagery has many practical uses. Imagery scientists, for example, may apply AGI algorithms to a commercial image of a chemical spill and then look for damage to vegetation to assess the destruction caused by that spill. AGI has also been used track the spread of avian flu outbreaks by mapping the location of poultry farms using feature extraction algorithms. These unclassified products can be distributed to local, federal and non-governmental emergency management agencies to assess and mitigate danger in situations where geospatial intelligence (GEOINT) adds an incredible amount of value.

AGI comprises the techniques used by GEOINT analysts and imagery scientists to process an image to paradoxically look beyond the visual information depicted in the image. Meanwhile, commercial imagery presents a promising path for GEOINT analysts, providing the basis for unclassified NGA products that may be widely shared and distributed with NGA's partners in many domestic and international endeavors. When AGI and commercial imagery are used together, the potential to enrich NGA's contributions to intelligence, humanitarian and defense missions is boundless.

Essentially, AGI attempts to make nonliteral information visual through the application of advanced computer processes and algorithms. AGI incorporates methods of collection beyond traditional panchromatic electro-optical imagery. Information gathered by AGI methods includes infrared, spectral, thermal infrared, synthetic aperture radar and multispectral data. The development of these tools amplifies the criticality and usefulness of GEOINT in emergency situations when imagery must show what cannot be seen.

Moreover, despite its intimidating name, many of the concepts in AGI seem more common sense than advanced. Indeed, some of the most widespread techniques currently used in imagery analysis were at one time considered the domain of AGI, which was once called "image processing." Like these past concepts, the end goal with all AGI methods is full integration into GEOINT production cells throughout NGA and the wider National System for Geospatial Intelligence. Furthermore, as the technology behind commercial nonliteral sensors advances, the skills of imagery scientists will become more incorporated and essential within the analytical GEOINT community.

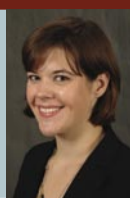


AGI techniques applied to multispectral commercial imagery of the Darfur region reveal healthy vegetation as red and burned areas as blue and gray.

When AGI techniques are applied to commercial imagery, potential applications for NGA's products multiply. To ensure the continued partnership of AGI and commercial imagery, imagery scientists work with commercial satellite vendors to help guide the next generation of collection systems that contain more bands in the electro-optical spectrum, allowing the satellites to have greater spectral coverage. DigitalGlobe's WorldView-2 satellite, slated to be launched later this year, will have an expanded set of bands with which to capture sophisticated imagery. Imagery scientists will study and exploit this imagery to gather data that otherwise would have gone unnoticed.

As commercial sensors become more advanced, AGI will become more innovative. Tools, software and processes currently used by imagery scientists will mature into standard GEOINT tradecrafts and raise AGI expertise throughout the analytic community. Increasing the capability to gather, exploit, and disseminate data benefits the culture of collaboration promoted among NGA and all of its partners. P

Kensey Liebsch
is an NGA Staff Officer in the Analysis and Production Directorate, Office of Plans, Resources and Metrics.



New Campus East

NGA Constructs a GEOINT Center of Excellence

By Dr. Eileen M. Preisser

Geospatial intelligence (GEOINT) embraces a relatively new construct within the Intelligence Community (IC). The challenge of the New Campus East (NCE) is to create an environment that showcases NGA's GEOINT mission in an exciting building that reinforces the role of GEOINT.

NGA is increasingly challenged by diverse and rapidly changing threats from around the world. Concurrently, the growing demand from policymakers, warfighters and law enforcement entities for accurate, relevant and timely GEOINT strains the resources available to process and report on an explosion of available information. Increased collaboration within NGA and the IC is essential for NGA to capitalize on its aggregate strengths to effectively tackle challenges in GEOINT tasking, collection and exploitation.

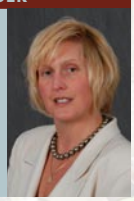
The design of NCE emphasizes NGA's investment in workforce ownership; employees in its Washington, D.C. area locations will consolidate at one facility to build a single GEOINT community of practice where all will work, learn and grow their expertise together. Additionally, NCE's design strives to transform some of NGA's older systems and processes. The effort will create a foundation through which NGA can communicate, coordinate and share requirements, expertise, products and feedback among consumers, collectors, analysts and private sector experts across time and distance, 24 hours a day, seven days a week.

To date, most of the initiatives within the IC have focused on the technical requirements supporting interagency collaboration. Although the NCE's active information technology (IT) effort will update NGA's IT connectivity and tools to provide the infrastructure for collaboration, it is the ongoing and planned transformation of business processes and organizational culture that will ultimately determine the effectiveness of NGA's success in creating a GEOINT center of excellence that fosters collaboration among multiple intelligence disciplines.

The adoption of the cultural values of ownership and collaboration are part of NGA's transformation. The agency has embraced the concept of e-business and is actively using portals, collaborative tools, Intellipedia (the IC wiki environment), blogs and chat sessions. For this reason, collaboration influenced the NCE design significantly. The design organizes work areas to support people and their mission functions; those who collaborate and work together will be collocated. The design integrates team members based on mission by means of neighborhoods—open, flexible, inviting work spaces that cluster expertise within the wings of the building. The neighborhood design provides for a variety of meeting, teaming and gathering places that are more than just conference rooms with doors; many sizes and types of work areas are scattered across each neighborhood. NGA will also have the largest conference space in the IC—a 552-seat classified venue with numerous large breakout rooms where interagency conferences and working groups can meet to share ideas and educate one another.

The NCE project is all about consolidation and creating a collaborative future for GEOINT within the IC. Although the key guiding principle for the design was to enable mission success, the design facilitates the agency's organizational change and transition. The NCE seeks to inspire the workforce and the customer, unify the agency and meet the needs of NGA's future high-tech workforce. P

Dr. Eileen M. Preisser
an NGA Geospatial Intelligence Officer, is assigned to the New Campus East Program Management Office to direct the NCE Advocacy effort.



Construction advances on NGA's New Campus East.
Photo by Larry Franklin

IC Senior Historians Panel Nurtures the Human Network

By Dr. Gary E. Weir

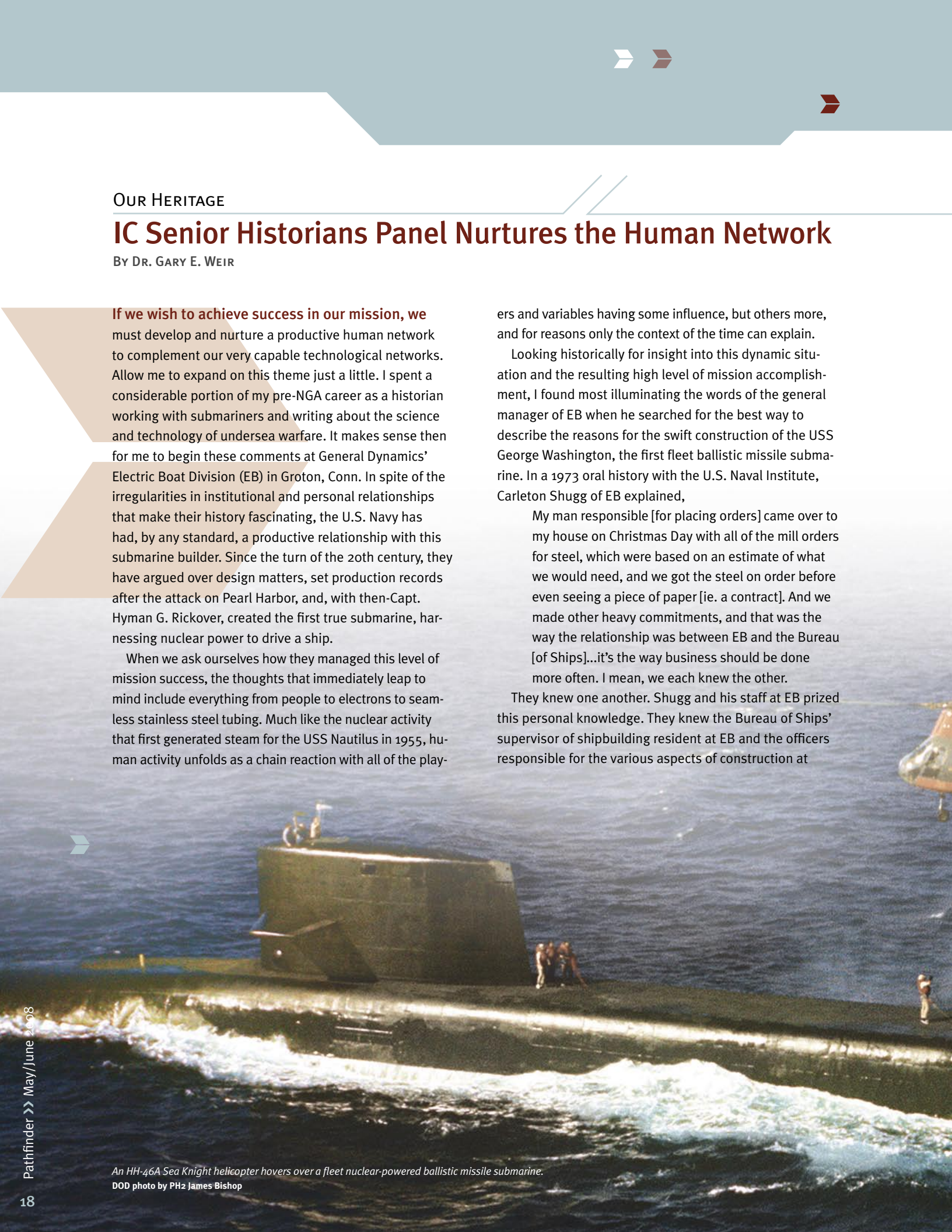
If we wish to achieve success in our mission, we must develop and nurture a productive human network to complement our very capable technological networks. Allow me to expand on this theme just a little. I spent a considerable portion of my pre-NGA career as a historian working with submariners and writing about the science and technology of undersea warfare. It makes sense then for me to begin these comments at General Dynamics' Electric Boat Division (EB) in Groton, Conn. In spite of the irregularities in institutional and personal relationships that make their history fascinating, the U.S. Navy has had, by any standard, a productive relationship with this submarine builder. Since the turn of the 20th century, they have argued over design matters, set production records after the attack on Pearl Harbor, and, with then-Capt. Hyman G. Rickover, created the first true submarine, harnessing nuclear power to drive a ship.

When we ask ourselves how they managed this level of mission success, the thoughts that immediately leap to mind include everything from people to electrons to seamless stainless steel tubing. Much like the nuclear activity that first generated steam for the USS Nautilus in 1955, human activity unfolds as a chain reaction with all of the players and variables having some influence, but others more, and for reasons only the context of the time can explain.

Looking historically for insight into this dynamic situation and the resulting high level of mission accomplishment, I found most illuminating the words of the general manager of EB when he searched for the best way to describe the reasons for the swift construction of the USS George Washington, the first fleet ballistic missile submarine. In a 1973 oral history with the U.S. Naval Institute, Carleton Shugg of EB explained,

> My man responsible [for placing orders] came over to my house on Christmas Day with all of the mill orders for steel, which were based on an estimate of what we would need, and we got the steel on order before even seeing a piece of paper [ie. a contract]. And we made other heavy commitments, and that was the way the relationship was between EB and the Bureau [of Ships]...it's the way business should be done more often. I mean, we each knew the other.

They knew one another. Shugg and his staff at EB prized this personal knowledge. They knew the Bureau of Ships' supervisor of shipbuilding resident at EB and the officers responsible for the various aspects of construction at



An HH-46A Sea Knight helicopter hovers over a fleet nuclear-powered ballistic missile submarine.
DOD photo by PH2 James Bishop

the bureau. Indeed, 17 EB engineers actually worked at the bureau with the Navy engineers in 1957 and at times sent instructions from Washington to bureau personnel in Groton with full Navy authority.

Historically, a human network made USS Nautilus and USS George Washington possible. It permitted Carleton Shugg to trust the Navy commitment. This professionally intimate communication system gave access to Navy spaces and systems to EB engineers because the mission demanded it. Without an effective human network, collaboration in the shipyard, creating a weapons system, doing intelligence analysis, or composing geospatial intelligence will not happen.

Even among historians in the Intelligence Community (IC), the need for this human network holds true. In his Director of National Intelligence Instruction number 180, issued late in the summer of 2007, Director Mike McConnell mandated that all 16 member activities of the IC should have a professionally driven, agency-supported history and heritage program. With that instruction, he also placed the weight of his authority behind the IC Senior Historians Panel created only a few years earlier. This past February, the History Program at NGA hosted the panel meeting for the second time in as many years. Anyone in the room observing would have realized the growing familiarity among the participants, their readiness to step forward and assist one another, their interest in projects all over the IC, and their willingness to share technology, techniques, insights and methods. This growing professional intimacy will ensure productive results across the community and generate new applied history tools that will reach the warfighter. With representatives from all over the IC, this group has accomplished many things, but the late Carleton Shugg would understand its most important achievement. It has reached the same stage of integration and mutual knowledge that made great undertakings possible: "I mean, we each knew the other." P

Dr. Gary E. Weir
is the NGA Historian.

Visual Media Artists Capture ICy Awards

By Neil Hartbarger

To NGA's Web and motion media experts, nothing is more fun than developing new ways to deploy and show off geospatial intelligence using a 3-D world of movement and interaction. Their success was rewarded recently when two creative products won recognition at the first annual Intelligence Community (IC) Media Excellence Awards, known as the "ICys," held in February at the National Reconnaissance Office's (NRO's) Jimmie D. Hill Conference Center.

A six-member team from NGA's GEOINT Simulations Branch won first-place recognition in the Interactive and Motion Graphics, Computer Based Training (CBT) and Web category for PlotR, an interactive multimedia collaboration tool that allows users to explore, create, edit and comment on geospatial data. PlotR makes up-to-the-minute information available to anyone in the IC with a Joint Worldwide Intelligence Communication System connection. Because the data points are stored and updated in a database and served out "live" to users over a Web connection, any updates, including comments, uploaded media and brand-new data points, are instantly available throughout the IC. PlotR was officially rolled out to the IC on March 22, 2008.

NGA Office of Corporate Communications' Kipling Williams earned third place for his inspired 3-D animated fantasy portrayal of Santa Claus using NGA geospatial datasets to plan his delivery route. Developed as a public affairs initiative for the NGA Web site, the animation ends with Santa Claus "activating" his lead reindeer Rudolph's nose to start the trip. This two-minute clip was recognized in the Interactive and Motion Graphics, 3-D Models and Animations category.

The "ICy" Award recognizes exceptional media throughout the Intelligence Community.

The Media Excellence Awards were judged by teams from across the IC. In this year's inaugural running, the awards drew more than 500 entries in overall categories of Video Production, Print Graphics, Photography, and Interactive and Motion Graphics. First-, second- and third-place award winners received a sleek, transparent trophy with the project name and the ICy logo engraved on it.

The conference center was overflowing with cheering participants who enjoyed a full-blown production, complete with two guest speakers, a red carpet and moving spotlights. NRO's Media Production Center sponsored the event and is already at work on next year's ICy Awards. P

Neil Hartbarger

is a Senior Multimedia Developer with an NGA contractor supporting the Analysis and Production Directorate's Scene Visualization and Multimedia Branch.

NGA 12 FOCUS AREAS

- Look outward and be the most collaborative and integrated partner with the IC and warfighter
- Invest in our people, with a commitment to diversity, to preserve our nation's GEOINT advantage
- Strengthen quality of analysis in concert with other IC partners
- Develop and execute a comprehensive commercial imagery strategy
- Integrate airborne with NTM and other sources
- Implement an information technology structure to improve access to and discovery of GEOINT
- Advance basic and applied research and development of leading edge science and technology
- Achieve front-end/back-end alignment extending from collection platforms, to building a foundation knowledge base, to providing comprehensive access to and assimilation of NGA products and services
- Build new and enhance enduring international partnerships
- Provide a multi-INT environment at the New Campus East and NGA West that advances collaboration across the IC
- Maintain the highest standards of conduct
- Strengthen governance and performance management

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FEDERAL BUREAU OF INVESTIGATION
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THE DEPARTMENT OF THE
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DEPARTMENT OF THE ARMY
1775
UNITED STATES OF AMERICA
DEPARTMENT OF THE NAVY
UNITED STATES OF AMERICA
U.S. Department of Justice
Drug Enforcement Administration
UNITED STATES COAST GUARD
SEMPER PARATUS
1790
U.S. DEPARTMENT OF HOMELAND SECURITY
DEPARTMENT OF STATE
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